

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

GENERAL ANATOMY AND PHYSIOLOGY.

1. *Structure of the Retina.*—Müllers *Jahresbericht* for 1837 contains an interesting account of the recent investigations of some German Anatomists, relative to the structure of the retina. The details we may give hereafter—the results, which we copy from the *London Med. Gaz.*, July 7, 1838, are all we have space for at present.

“It may be considered as proved by these investigations, that the retina, which has very generally been regarded as merely a single expansion, or melting out of the optic nerve, is formed of several distinct layers. That, immediately subjacent to the membrana Jacobi, there is a pulpy soft matter, which hardens in alcohol, &c., and may then be removed in small scales; that next internally to this there is a dense firm membrane, which has a granular aspect on both surfaces, and supports the nervous fasciculi and filaments of the divided optic nerve, which lie beneath it, radiating from the nerve as a centre, and covering the whole vitreous humour as if by an equable expansion; and that immediately beneath the radiating filaments of the nerve, the vessels are distributed in a venous and an arterial network, forming a single vascular layer. Through the meshes of these networks, each ultimate fibril, having turned inwards, passes, receiving from them a simple sheath, or having a more or less perfect papilla formed at its base. Thus curved, they project towards the anterior part of the eye, being arranged so densely, that when viewed in front they present a perfectly smooth and even surface, of the same kind as, but much more fine and delicate than, that of velvet. Thus the retina receives impressions as other nerves are supposed to do, on the extremities of ultimate nervous fibrils, and presents that most admirable opportunity of observing their mode of termination, which it is probable that future investigations will prove to be the same in all parts of the body.”

2. *On the Functions of the Rete Mucosum and Pigmentum Nigrum in the Negro.*—Mr. R. M. GLOVER read a paper on this subject to the Medical Section of the British Association at their last meeting. The paper commenced by stating, that the degree of developement of the rete mucosum and its pigment determined the power of resisting the excessive heat of the sun in tropical climates, as evinced by the Negro, (the type, in this respect, of the dark races,) the European, and the Albino. The *modus operandi* must be discovered by an attention to both the physical and vital properties of this peculiar organization. The doctrine at present taught on the subject is, that the black skin absorbs more heat, but that the cutis vera of the negro is not so liable to inflammation from a high temperature, as that of a European from a lower temperature; and, as the radiation of caloric from black must be greater than from white skins, the pos-

sser of the former must cool more readily, and enjoy greater alternations of heat and cold. The former part of this doctrine is founded on the experiments and deductions of Sir Everard Home, as detailed in his paper in the *Philosophical Transactions*. A number of experiments detailed in the paper on the vesicatory powers of differently coloured substances, under the concentrated rays of the sun, contradicted the deductions of Sir E. Home; and hence arose the necessity of looking to the vital properties of the skin of the negro, and the mode in which it is likely to be affected by the radiating and absorbing power of the pigment with which he is provided. Blumenbach and Winterbottom state, that the negro perspires more readily and freely than the European; and Davy says, "In the inhabitants of the tropics, the exhalent arteries of the skin seem unusually expanded, and the whole apparatus peculiar to this secretion unusually developed; and I believe that the blood itself is less viscid, more fluid, and flows more readily through the vessels, so as to promote perspiration, and by that means contributing to the cooling of the surface. And being cooled itself, it contributes again, when it flows back upon the heart, to the reduction of the temperature of the internal parts." Were the inhabitant of the tropics not possessed of this peculiar organization, his system could not respond to the stimulus of heat, by a determination of fluid towards the surface. Doubtless, the excessive absorption of heat by his skin, is useful in promoting this effect; but in the system qualified to respond to the stimulus of heat, and not in the organization of the skin alone, must an explanation be sought of the capability of the negro to withstand the heat of tropical regions.—*Athenæum*.

3. *Experimental Investigation of the Functions of the eight pair of Nerves*.—Dr. JOHN REID communicated to the Medical Section of the British Association the principal results which he has obtained in prosecuting this inquiry since the last meeting of the association. Dr. Reid chiefly confined himself to the Pulmonary and Gastric branches of the Nervus Vagus. In a great number of experiments upon dogs, in which the nervi vagi and recurrents were divided, Dr. Reid satisfied himself that, when a sufficient quantity of air reached the lungs, the respirations were at first performed with ease. The only immediate and constant effect observed, was a great diminution in the number of the respiratory movements, which at the same time became slower and more heaving. When the number of respirations were from sixteen to twenty in a minute, they, in general, instantly fell to from six to eight. In one animal, in which they were from twenty-four to twenty-eight, they immediately fell to fourteen; and, in another animal, in which they were twenty-four, they fell to eight. At a longer or shorter period after section of the nerves, the inspirations became more prolonged and heaving, while the expirations continued to be comparatively short and rapid, and attended by a sound caused by the sudden expulsion of the air. After a time, the inspirations become more heaving and prolonged, the blood is less perfectly arterialized in the lungs, and the arteries circulate blood gradually approaching the venous character; the animal becomes dull and stupid, and dies asphyxiated. In tracing the morbid changes upon the lungs, which follow section of the vagi, Dr. Reid has satisfied himself, from the dissection of animals killed at various periods after section of the vagi, that the bloodvessels of the lungs become gradually loaded with blood, and that this, in a few cases, is the only change which can be observed after death. More frequently, however, this congestion of the lungs gives rise to effusion of serum, which in the bronchial tubes, is rendered frothy by the passage of air through it; to condensation of portions of the lung without any apparent effusion of lymph; and more rarely to true pneumonia. The respiratory murmur is little, if at all, changed for a short time, but it afterwards becomes bronchial; and when the effusion of serum takes place, the true *râle crepitant* may be heard. It appears, however, that these morbid changes in the lungs do not necessarily take place after section of both vagi and recurrents. In a dog, which was killed in the presence of Dr. Alison, twelve days after section of the vagi and recurrents, and which had apparently recovered from the effects of the operation, the lungs were found perfectly healthy, though the cut ends of both vagi were rather more than one